

MAIL CARRYING OVER THE ICE.

WINTER DANGERS OF A ROUTE OVER LAKE ERIE.

Boats Used Adapted to Three Methods of Traveling—Sometimes They Ride on the Ice, Sometimes They Sail Through the Water—Peril in Snowstorms.

For nerve, endurance and persistence it would be hard to beat the winter mail carriers between the Ohio mainland and the four inhabited islands of the curious little archipelago in the southwestern part of Lake Erie.

Kelleys', the largest island, lies almost due north of Sandusky. The three Bases lie a little further west and are known as North Base, Middle Base and South Base. To the Post Office Department the first-named is Isle St. George and the last Put-In-Bay.

In warm weather the mail reaches the islands via Sandusky on regular daily steamers. From Dec. 1 to March 31 the winter service is in operation.



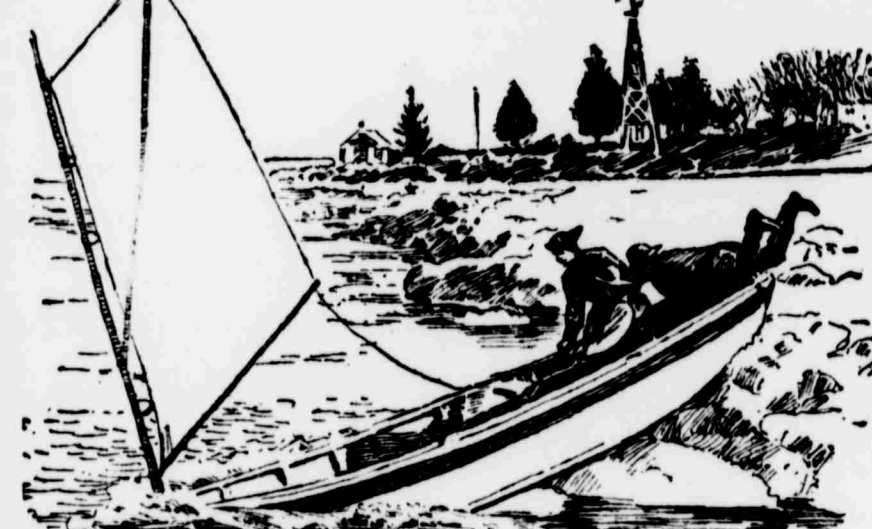
SAILING IN AN ICE-CLEARED STRETCH OF WATER.

Nearly every winter there is a brief period during which the ice freezes solidly between mainland and islands and then the carriers drive over their route comfortably with a horse and light sled.

Most of the time, though, the state of the lake is such that the mail must be carried in a nondescript sort of craft which can be used as a sledge, a rowboat or a sailboat, as occasion demands. There are many trips each winter on which the carriers use their queer craft in all three ways. There are trips also which are full of real danger.

The contracts to carry the mail have always been taken by two men in partnership, and it is very seldom that one dares make a trip alone. When the lake is bad a third man is hired.

The mail route to Kelley's Island, eight miles of ice or water without a break, has



BEGINNING THE JOURNEY TO THE BASES.

Marblehead for its shore end. The Bass Island route, part land and part lake, about ten miles in length, leaves the shore at Catawba Island, where the mail is sent from Port Clinton.

The best way to get a true notion of the work involved in carrying the mail over this route is to take passage for North Base with the carriers some day in mid-winter, when the lake is about half frozen over. One who has been such a passenger told this story of his experiences.

"I left Port Clinton in the middle of a bright January morning," he said, "driving the nine miles to Catawba Island. There the carriers were waiting with their sledges."

"They loaned me a pair of long boots and a set of skis to keep me from getting too wet if I should go through the ice, and told me that I would be expected to use one of the sleds they had in the boat in case of emergency."

"The boat is flat bottomed, apparently of the ordinary lake type, is 16 feet long, about 20 inches deep and of 4 foot beam. It is sheathed with galvanized sheet iron the better to stand the ice-battering it gets on every trip. On its bottom are two runners four inches high and about five feet long."

"Before we started creeping—steel spikes on spurs to prevent slipping on the ice—were strapped to my boots and I was cautioned to keep my hand on the boat every minute while walking, so that I could save myself by jumping into it if the ice gave way under me."

"Our trouble began before we had gone

half a mile. The carriers were then towing the sleds—boat stern foremost—harnessed to it with short lines or ropes attached about half way between the stern and amidships, and passed over their shoulders. I pushed, and it took the usual strength of all three to make headway, for the wind was blowing a gale from the northwest."

"Suddenly I heard a cracking noise. Both carriers yelled and in a minute we were in the water. As we all had hands on the boat we saved ourselves by clinging to the sleds without getting much of a wetting."

"I was more clumsy than they and got pretty damp before I could scramble into the boat. They made me sit down in the stern and wrap myself well up to keep from taking cold. Then they 'crept' the boat for the next half mile, creeping is necessary when the ice is too solid to allow of sailing, poling or rowing and at the same time not strong enough to bear the weight of a man."

"Compared with creeping mere towing the sleds—boat is child's play. The men kneel, one on each side of the boat, one with his right, the other with his left leg inside the craft. Then with the other leg out-side each laboriously walks on the thin ice, one foot, thus half pushing, half pulling the boat through the rotten, pliable mass of half frozen water."

"Steel muscled though the Bass Island

mail carriers must of necessity be, a few minutes of creeping is quite enough and after half a mile if they are drenched with perspiration and trembling from fatigue, while their muscles ache as if they had been pounded with sledge hammers."

"The rotten ice was followed by a stretch of open water nearly a mile wide. If the wind had been right the carriers would have stepped their ten-foot mast in the bow of the boat, spread their spritsail and sailed a brief period of rest. As it was, all hands had to take to the oars."

"The wind freshened and the seas seemed as high as steeples; every one broke over but we were not to be deterred. I thought my time had come for sure. One of the carriers had to go to the stern and steer with an extra hand on the tiller, and I had to take my trick at the rowing."

"I was shaking with chill when I began, but the mail route to Kelley's Island, eight miles of ice or water without a break, has

been in the hands of the carriers for many years. The carriers are men of great endurance and persistence, and it would be hard to beat them in the winter mail service between the Ohio mainland and the four inhabited islands of the curious little archipelago in the southwestern part of Lake Erie."

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American scientific men are to provide the necessary apparatus and pay certain of the expenses. It is not believed that the total expense to the American scientists will exceed \$10,000.

The surface currents, including the steady trade winds of the tropics, have been pretty thoroughly studied, but just what takes place in the upper air has still been rather guesswork at best.

In the tropics on either side of the equator there are supposed to be great anti-trade currents flowing above the trade winds and in an opposite direction, while in the north temperate zone peculiar conditions of temperature and direction of the currents have been discovered that have led many scientists to conjecture that great masses of warm air rise above the equator and roll off in constantly descending and cooling streams toward the two poles.

In support of such a hypothesis the scientists bring forward the well-established fact that the air does not grow steadily colder at the rate of one degree Fahrenheit for every 100 feet of vertical ascent, as we were taught in our physical geography at school, but that there are warm strata even up in the region of eternal cold. This phenomenon has been noted frequently in the kite-flying experiments at the Blue Hill Observatory, the meteorological station of Harvard University, south of Boston.

In the opinion of most authorities, the problem of such seeming irregularities can be settled only in a manner proposed by Mr. Rotch, who is the director at Blue Hill, and was able, at the recent meeting in Washington of the American Association for the Advancement of Science, to present the proposition for the German Government to furnish a vessel for the study of meteoric conditions in the middle Atlantic about the equator.

It is a theory of Mr. Rotch's that between the trade winds and the anti-trades intervenes an interval of comparatively still air. This is by no means absolutely certain but it is in accordance with conditions discovered in the kite-flying experiments at Blue Hill Observatory, and, if found, it will justify Mr. Rotch's contention that the most fruitful means of exploring the higher atmospheric levels about the tropics is

through use of kites. Down from a movable base it is indeed upon the kite that the American scientists will chiefly rely if the proposed expedition takes place, though the rubber balloon employed for similar research by Dr. Assmann of Berlin will also undoubtedly be used. The limitations of the balloon, however, are so manifest that it will scarcely supplant the Hargrave and Lamson high flyers.

It can be sent to great heights, but it cannot be maintained there for purposes of continuous observation. Furthermore, the hunt for the meteorological instruments which are released from it by parachute over a circle of twenty or thirty miles radius, is an annoying feature of the sport on land, and will be likely to constitute a very serious objection to its use for the paper balloons which the French meteorologists still use, their case is even worse; they do not burst, like the German

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